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10/590,012

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10/30/2008

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EXAMINER

DUDNIKOV, VADIM

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,012	Applicant(s) YANAI ET AL.	
	Examiner VADIM DUDNIKOV	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/28/08, 3/14/08, 12/07/07, 8/21/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species II (claims 1, 3) and subspecies A (claim 6) in response filed at 8/29/2008 is acknowledged.

Claims 1, 3, 4 and 6 have been elected by Applicant for examination. Claims 2 and 5 are withdrawn from consideration as non-elected.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1, 3, 4 and 6 have been examined.

Information Disclosure Statement

2. The information disclosure statements filed 04/28/08, 3/14/08, 12/7/07 and 8/21/06 and all other information or that portion which caused it to be listed has been placed in the application file. The information has been considered. A signed copy of Form 1449 has been enclosed.

Specification

3. Specification is objected to because of the following informality:

On page 14, line 14 replace –HPT— to –LPT— before “3”.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Specification is objected to because the limitation “units of compressors” recited in claims 4 and 6 are not disclosed in the Specification. Only “compressors” are disclosed in Specification on page 15, lines 21 and 27.

The applicant is requested to perform a thorough review of both the claims and specification to facilitate an appropriate correction to this objection.

Claim Objections

6. Claim 4 is objected to because of the following informality:

in claim 4, in line 3 replace ~~-(1)—~~ to ~~-1—~~ after “one”;

in claim 6, in line 2 replace ~~-(1)—~~ to ~~-1—~~ after “one”.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of

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the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims **1, 3, 4 and 6** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim 1 contains subject matter, “a bypass pathway that has the second gas turbine bypassed to the coolant” which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no disclosure how a bypass pathway (which is a plurality of pipes) can be bypassed the second gas turbine to the **coolant** (which is gas).

Claims **3, 4** and **6** are rejected as depended of rejected claim 1.

9. Claim **4 and 6** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims 4 and 6 contains subject matter, “the first gas turbines being connected to “n” shafts and sharing same shafts with the “n” units of compressors,” which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no disclosure in Specification how the first gas turbines (it can be only one first gas turbine) can be connected simultaneously to “n” shafts and how it can sharing same shafts with the “n” units of compressors.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1, **3, 4** and **6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention because the metes and bounds of the limitation "a bypass pathway (which is plurality of pipes and valves) that has the second gas turbine bypassed to the coolant (which is gas)" recited in claim 1 have not been set forth.

12. Claims **4 and 6 are** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention because the metes and bounds of the limitation "'the first gas turbines being connected to 'n' shafts and sharing same shafts with the 'n' units of compressors,'" have not been set forth.

The term "the first gas turbines" is a contradiction, because only a single one can be the "first".

13. Claim **4 and 6 are** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention because the limitation " being connected to 'n' shafts " and "and sharing same shafts with the 'n' units of compressors" can have different interpretations such as: it can mean that all gas turbines referred to as "first" share the same shafts with all units of compressors, or that there is a correspondence, one-to-one, between members of the collection of "first gas turbines" and "units of

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compressors", such that each of said "first gas turbines" shares a shaft with the corresponding "unit of compressor".

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by McLain et al., ("Reactor Handbook", v. IV, Interscience Publication, Wiley & Son, 1964, McLain hereinafter).

As best as can be understood because of the noted indefiniteness under 35 USC 112, 2nd, as discussed above the limitation: "a bypass pathway that has the second gas turbine bypassed to the coolant " is interpreted by examiner as: "a bypass pathway that has the second gas turbine bypassed to the **coolant pipe**". On independent claim 1, McLain teaches: A gas turbine plant (as shown in FIG. 18.8, page 689) comprises: a high-temperature gas-cooled reactor (reactor in FIG. 18.8) which warms a coolant by thermal energy being obtained by nuclear fission of clad fission products in coated-particle fuels; a first gas turbine (HP turbine) that is rotated by the coolant being warmed by the high-temperature gas-cooled reactor and shares a same shaft with a compressor

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(HP compressor) compressing the coolant; a second gas turbine (LP turbine) that is rotated by the coolant being discharged from the first gas turbine and shares a same shaft with a generator (generator) performing electrical power generation operation; and a bypass pathway (bypass 7 with a valve) that has the second gas turbine bypassed to the coolant pipe; wherein, during the rated load operation, the flow volume of the coolant flowing through the bypass pathway is controlled so as to make the rotating speed of the first gas turbine fall within a range of a predetermined rotating speed.

According to MPEP 7.37.10 the limitations of claim 1 with recitations: “which warms a coolant by thermal energy being obtained by nuclear fission of clad fission products in coated-particle fuels”; “that is rotated by the coolant being warmed by the high-temperature gas-cooled reactor and shares a same shaft with a compressor”; “compressing the coolant a second gas turbine”; “is rotated by the coolant being discharged from the first gas turbine and shares a same shaft with a generator”; “performing electrical power generation operation”; “has the second gas turbine bypassed to the coolant”; “during the rated load operation, the flow volume of the coolant flowing through the bypass pathway is controlled so as to make the rotating speed of the first gas turbine fall within a range of a predetermined rotating speed” are related to the statements of intended use and the field of use and have no a patentable weight. The statements of intended use or field of use, clauses are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See MPEP § 2114 which states:

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A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions.

Apparatus claims cover what a device is not what a device does.

The gas turbine plant disclosed by McLain is capable to perform operations disclosed by functional language in claim 1 and meets claim limitation because said plant has a bypass (7) with a valve.

As best as can be understood because of the indefiniteness as discussed above, on claim 3, McLain teaches: the bypass pathway is provided with bypass valves (as shown in FIG. 18.8, bypass 7 with a valve controlled by “overload and load control”) to control a flow volume of the coolant flowing through the bypass pathway.

According to MPEP 7.37.10 the limitations of claim 1 with recitations: “to control a flow volume of the coolant flowing through the bypass pathway” is related to the statements of intended use and the field of use and have no a patentable weight. The statements of intended use or field of use, clauses are essentially method limitations or statements or intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See MPEP § 2114 which states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions.

Apparatus claims cover what a device is not what a device does.

The gas turbine plant disclosed by McLain is capable to perform operations disclosed by functional language in claim 3 and meets claim limitation because said plant has a bypass (7) with a valve.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims **4** and **6** are rejected under 35 U.S.C. 103(a) as being obvious over McLain et al., ("Reactor Handbook", v. IV, Interscience Publication, Wiley & Son, 1964, McLain hereinafter) in view of Bolton et al. (USPAP 2004/0042579 A1, Bolton hereinafter, inserted in IDS filed 8/21/06).

On claim **4**, McLain teaches all limitation of claim 1.

McLain does not necessarily teach directly the limitation: A gas turbine plant wherein, "n" units of compressors are provided and at a same time, the first gas turbines being connected to "n" shafts and sharing same shafts with the "n" units of

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compressors, respectively, are provided ("n" is an integer number being more than one 1).

However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include said limitation in view of Bolton, drawn to the nuclear power plant, hence analogous art who teaches a first gas turbine 16, a second gas turbine 18 a power gas turbine 20, being connected to shafts and sharing same shaft with a first compressor 30, with a second compressor 26 and with a power generator 32 in FIG. 2.

Modification of the McLain's power plant according to the Bolton teaching meets claim limitation.

Configuration of the power plant with number of pair turbine/compressor "n" larger than 2 represents a process of design and optimization with simple duplication of pair of turbine/compressor.

Increasing the number pair turbine/compressor is no more than the duplication of parts with predictable and intended effects. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Motivation for said inclusion derives from Bolton teaches: "The drive means may include, arranged in series, a high pressure turbine, a low pressure turbine and a power turbine drivingly connected, respectively, to the high pressure compressor, the low pressure compressor and an electrical generator"([0018])

The claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his her technical grasp. If this leads to the

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anticipated success, it is likely the product not of innovation but of ordinary skill and common sense (MPEP 2143).

On claim **6**, McLain teaches all limitation of claim 3.

McLain does not necessarily teach directly the limitation: A gas turbine plant wherein, "n" units of compressors are provided and at a same time, the first gas turbines being connected to "n" shafts and sharing same shafts with the "n" units of compressors, respectively, are provided ("n" is an integer number being more than one 1).

However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include said limitation in view of Bolton, drawn to the nuclear power plant, hence analogous art who teaches a first gas turbine 16, a second gas turbine 18 a power gas turbine 20, being connected to shafts and sharing same shaft with a first compressor 30, with a second compressor 26 and with a power generator 32 in FIG. 2.

Modification of the McLain's power plant according to the Bolton teaching meets claim limitation.

Configuration of the power plant with number of pair turbine/compressor "n" larger than 2 represents a process of design and optimization with simple duplication of pair of turbine/compressor.

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The claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense (MPEP 2143).

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vadim Dudnikov whose telephone number is 571- 270-1325. The examiner can normally be reached on 8:00 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached, Mon-Fri 7:00am-4:00 pm, at telephone number 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VD. 10/14/08.

/Johannes P Mondt/
Primary Examiner, Art Unit 3663